

FIG. 1

FASTRIV® F.E.A. AUTOMATION
(PRE-ANALYSIS (INPUT PHASE))

FILE EDIT PRINT

PROJECT DEFINITION
RIVET DEFINITION
JOINT DEFINITION
INSTALLATION EQUIPMENT DEFINITION
ANVIL DEFINITION
PLUNGER DEFINITION
DESIGN REQUIREMENTS
DATABASE SEARCH
F.E.A. PARAMETERS
POST PROCESSOR
ANALYSIS (LIGHT "ON" OR "OFF")

20

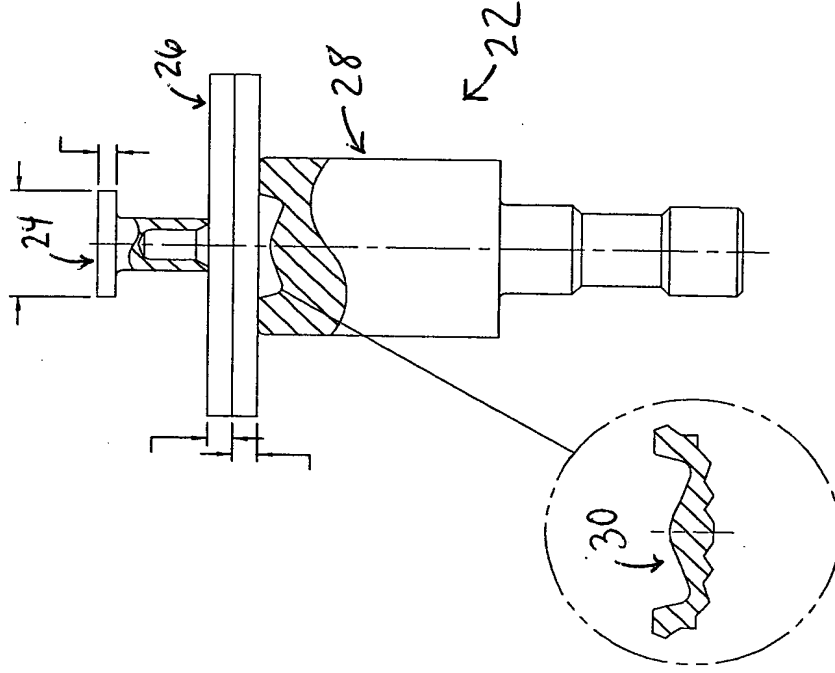


FIG. 2

FASTRIV® F.E.A. AUTOMATION
(PRE-ANALYSIS / PROJECT DEFINITION)

FILE EDIT PRINT

PROJECT DEFINITION
RIVET DEFINITION
JOINT DEFINITION
INSTALLATION EQUIPMENT DEFINITION
ANVIL DEFINITION
PLUNGER DEFINITION
DESIGN REQUIREMENTS
DATABASE SEARCH
F.E.A. PARAMETERS
POST PROCESSOR
ANALYSIS (LIGHT "ON" OR "OFF")

PROJECT DEFINITION

CUSTOMER NAME: _____

DATE: _____

ANALYSIS: _____

APPLICATION DESCRIPTION: _____

INTRODUCTION: _____

BACKGROUND: _____

RESULTS: _____

CONCLUSION: _____

PROJECT NUMBER: _____

FIG. 3

FASTRIV® F.E.A. AUTOMATION
(PRE-ANALYSIS (RIVET DEFINITION))

PRE-ANALYSIS RIVET DEFINITION

HEAD STYLE: ○ FLAT COUNTERSUNK HEAD
○ ORDINARY OVAL HEAD
⊙ TINMAN HEAD

FILE EDIT PRINT

PROJECT DEFINITION
RIVET DEFINITION
JOINT DEFINITION
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ANVIL DEFINITION
PLUNGER DEFINITION
DESIGN REQUIREMENTS
DATABASE SEARCH
F.E.A. PARAMETERS
POST PROCESSOR
ANALYSIS (LIGHT "ON" OR "OFF")

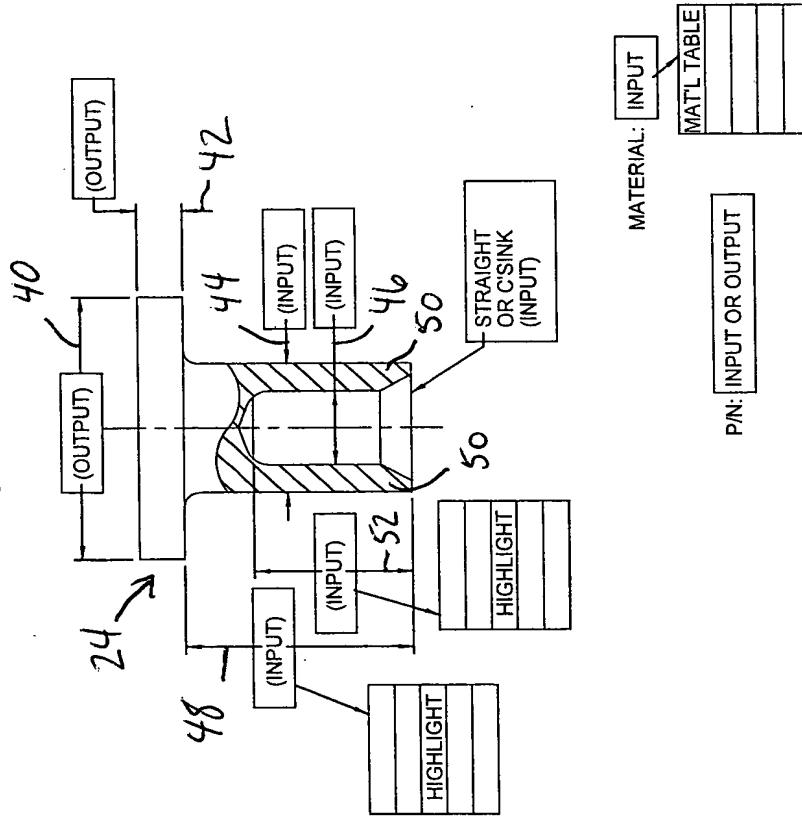


FIG. 4

FASTRIV® F.E.A. AUTOMATION
(PRE-ANALYSIS (JOINT DEFINITION))

PRE-ANALYSIS JOINT DEFINITION

FILE EDIT PRINT

PROJECT DEFINITION
RIVET DEFINITION
JOINT DEFINITION
INSTALLATION EQUIPMENT DEFINITION
ANVIL DEFINITION
PLUNGER DEFINITION
DESIGN REQUIREMENTS
DATABASE SEARCH
F.E.A. PARAMETERS
POST PROCESSOR
ANALYSIS (LIGHT "ON" OR "OFF")

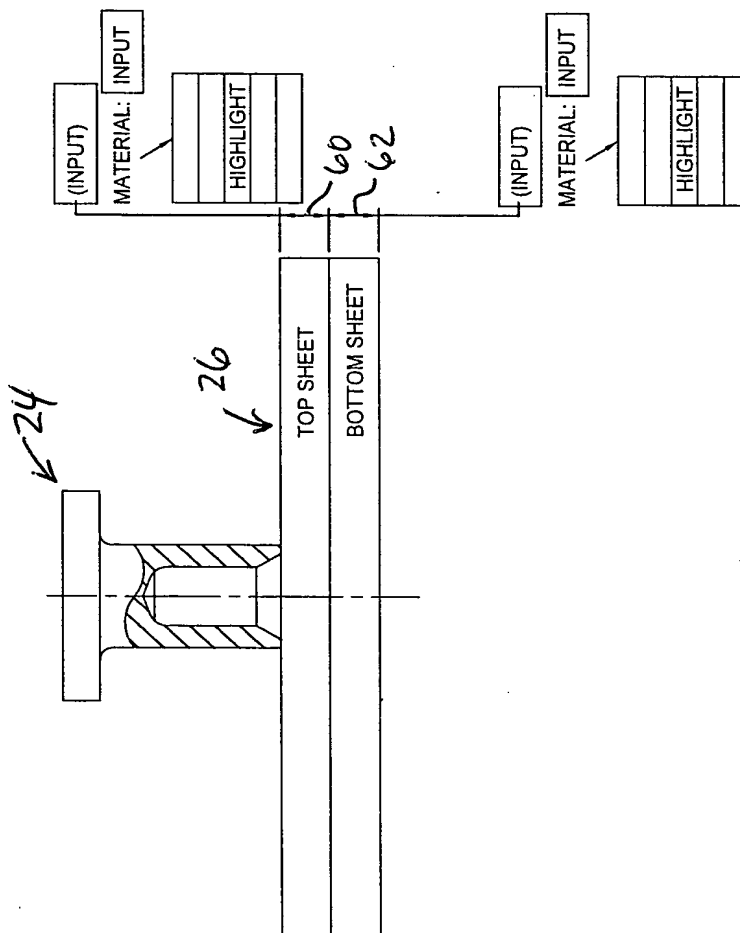


FIG. 5

FASTRIV® F.E.A. AUTOMATION
(PRE-ANALYSIS (INSTALLATION EQUIPMENT DEFINITION))

PRE-ANALYSIS INSTALLATION EQUIPMENT DEFINITION

FILE EDIT PRINT

PROJECT DEFINITION
RIVET DEFINITION
JOINT DEFINITION
INSTALLATION EQUIPMENT DEFINITION
ANVIL DEFINITION
PLUNGER DEFINITION
DESIGN REQUIREMENTS
DATABASE SEARCH
F.E.A. PARAMETERS
POST PROCESSOR
ANALYSIS (LIGHT "ON" OR "OFF")

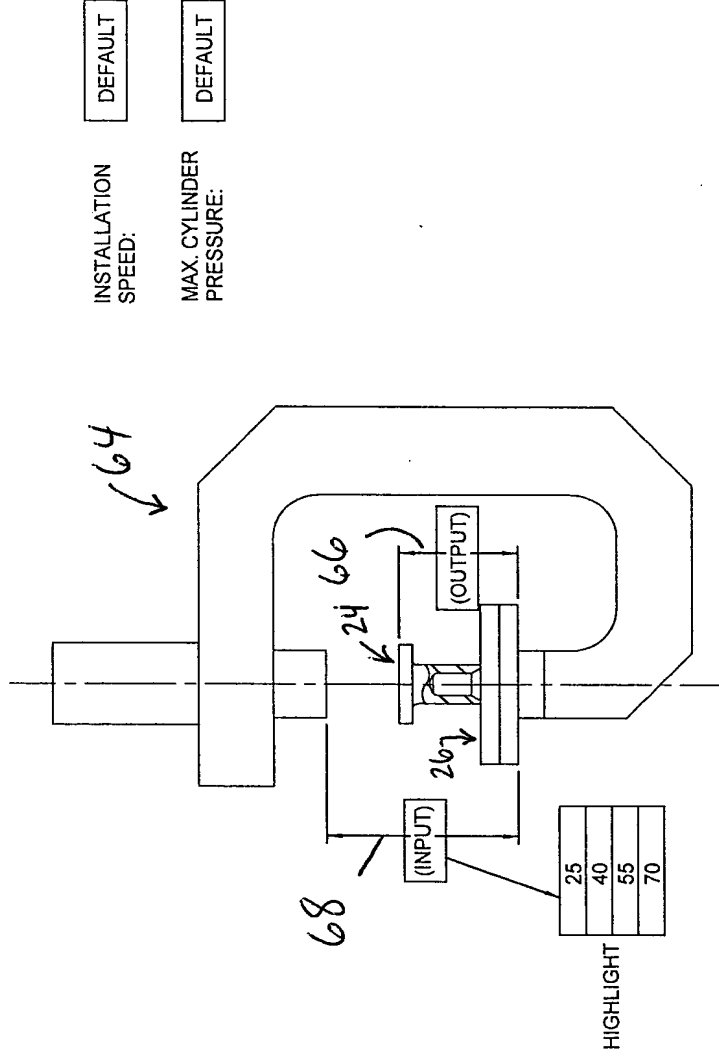


FIG. 6

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FASTRIV® F.E.A. AUTOMATION
(PRE-ANALYSIS (ANVIL DEFINITION))

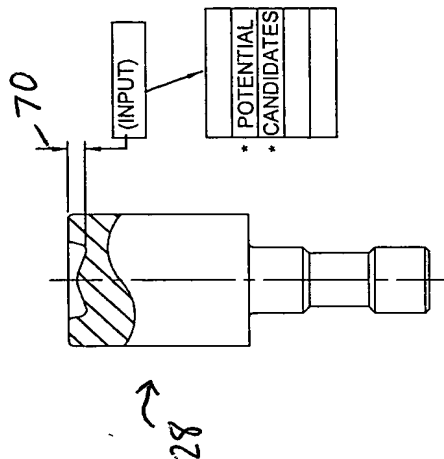
PRE-ANALYSIS ANVIL DEFINITION

FILE EDIT PRINT

PROJECT DEFINITION
RIVET DEFINITION
JOINT DEFINITION
INSTALLATION EQUIPMENT DEFINITION
ANVIL DEFINITION
PLUNGER DEFINITION
DESIGN REQUIREMENTS
DATABASE SEARCH
F.E.A. PARAMETERS
POST PROCESSOR
ANALYSIS (LIGHT "ON" OR "OFF")

ANVIL TYPE:

- ⊙ PLAIN CONE ANVIL
- DUAL RADII CONVEX ANVIL
- SINGLE RADII CONVEX
- CHAMFERED ANVIL



MATERIAL: **DEFAULT**

P/N: **INPUT OR OUTPUT** * MODELED AS RIGID

20

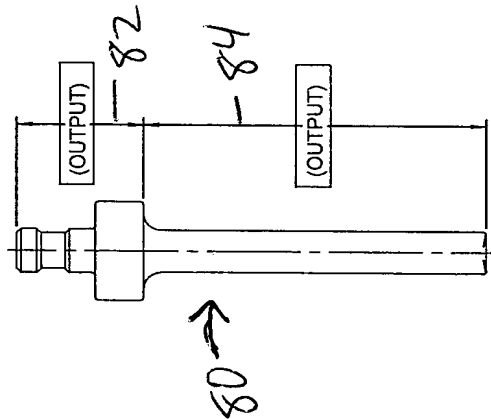
FIG. 7

FASTRIV® F.E.A. AUTOMATION
(PRE-ANALYSIS (PLUNGER DEFINITION))

PRE-ANALYSIS PLUNGER DEFINITION

FILE EDIT PRINT

PROJECT DEFINITION
RIVET DEFINITION
JOINT DEFINITION
INSTALLATION EQUIPMENT DEFINITION
ANVIL DEFINITION
PLUNGER DEFINITION
DESIGN REQUIREMENTS
DATABASE SEARCH
F.E.A. PARAMETERS
POST PROCESSOR
ANALYSIS (LIGHT "ON" OR "OFF")



MATERIAL:

* MODELED AS RIGID

FIG. 8

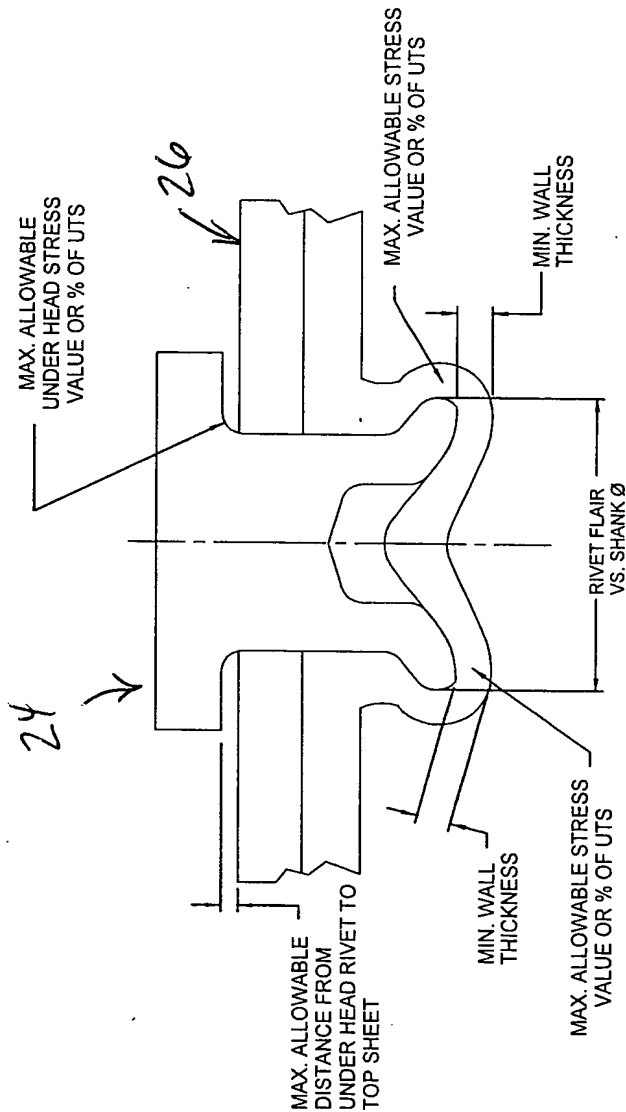
20

FASTRIV® F.E.A. AUTOMATION
(PRE-ANALYSIS (DESIGN REQUIREMENTS))

RIVETED JOINT REQUIREMENTS

FILE EDIT PRINT

PROJECT DEFINITION
RIVET DEFINITION
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PLUNGER DEFINITION
DESIGN REQUIREMENTS
DATABASE SEARCH
F.E.A. PARAMETERS
POST PROCESSOR
ANALYSIS (LIGHT "ON" OR "OFF")



RIVET JOINT
STRENGTH REQUIREMENT

-20

FIG. 9

FASTRIV® F.E.A. AUTOMATION
(PRE-ANALYSIS DATABASE SEARCH)

FILE EDIT PRINT

PROJECT DEFINITION
RIVET DEFINITION
JOINT DEFINITION
INSTALLATION EQUIPMENT DEFINITION
ANVIL DEFINITION
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DESIGN REQUIREMENTS
DATABASE SEARCH
F.E.A. PARAMETERS
POST PROCESSOR
ANALYSIS (LIGHT "ON" OR "OFF")

20

PRE-ANALYSIS DATABASE SEARCH

THE ABILITY TO SELECT
ANY OF COMBINATION
OF THE INPUTS AT THIS
STAGE. THIS WILL TIE
INTO A CENTRAL DATABASE

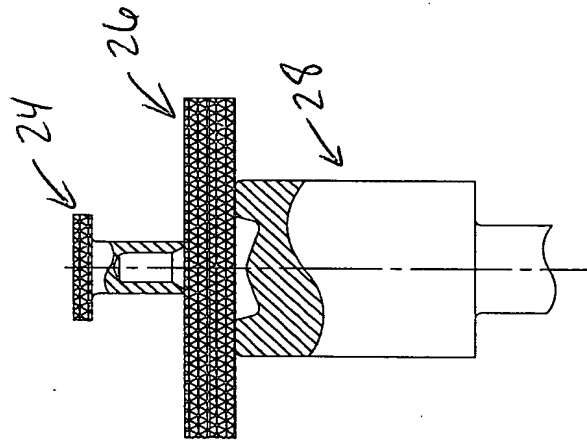
FIG. 10

FASTRIV® F.E.A. AUTOMATION
(PRE-ANALYSIS (F.E.A. PARAMETERS))

FILE EDIT PRINT

PROJECT DEFINITION
RIVET DEFINITION
JOINT DEFINITION
INSTALLATION EQUIPMENT DEFINITION
ANVIL DEFINITION
PLUNGER DEFINITION
DESIGN REQUIREMENTS
DATABASE SEARCH
F.E.A. PARAMETERS
POST PROCESSOR
ANALYSIS (LIGHT "ON" OR "OFF")

PRE-ANALYSIS F.E.A. PARAMETERS



OBJECT:
☒ RIVET (MESH, BCC)
☐ TOP SHEET (MESH, BCC)
☐ BOTTOM SHEET (MESH, BCC)

ADVANCED
SETTINGS

INTEROBJECT BCC
OK

FIG. 11

FASTRIV® F.E.A. AUTOMATION
POST-ANALYSIS

POST-ANALYSIS

FILE EDIT PRINT

DEFORMED /
UNDEFORMED
PLOT

DIMENSIONAL
RESULTS

STRESS
RESULTS

PUSH-OUT
RESULTS

SAFETY
FACTOR
PLOT

RETURN TO
PRE-ANALYSIS

OUTPUT
PLOTS / CALCULATIONS

FIG. 12

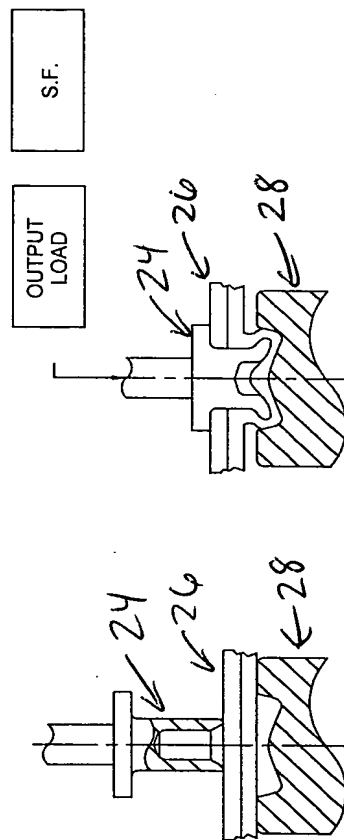
~90

FASTRIV® F.E.A. AUTOMATION
POST-ANALYSIS

FILE	EDIT	PRINT
DEFORMED / UNDEFORMED PLOT		
DIMENSIONAL RESULTS		
STRESS RESULTS		
PUSH-OUT RESULTS		
SAFETY FACTOR PLOT		
RETURN TO PRE-ANALYSIS		

90

DEFORMED / UNDEFORMED PLOT



DEFORMED

UNDEFORMED

L VS. Δ

* ZOOM CAPABILITY

* ADD / REMOVE ANY OBJECT(S)

* ANIMATION

FIG. 13

FASTRIV[®] F.E.A. AUTOMATION
POST-ANALYSIS

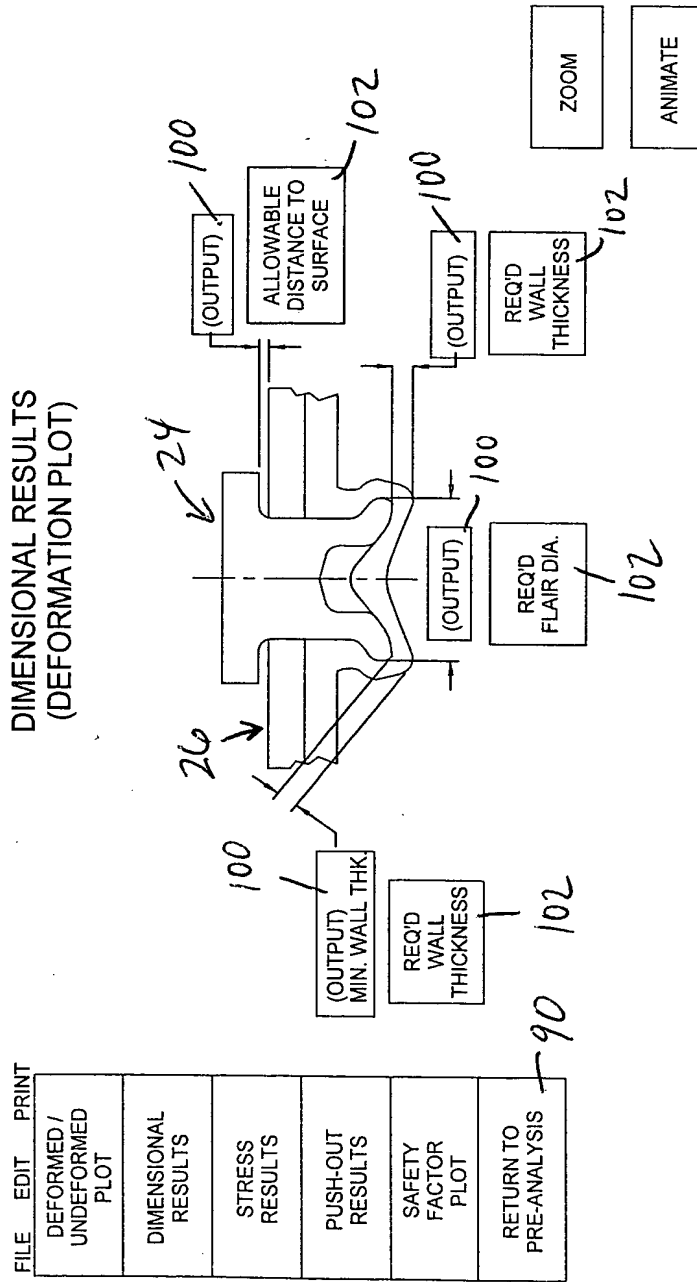


FIG. 14

FASTRIV® F.E.A. AUTOMATION
POST-ANALYSIS

FILE	EDIT	PRINT
DEFORMED / UNDEFORMED PLOT		
DIMENSIONAL RESULTS		
STRESS RESULTS		
PUSH-OUT RESULTS		
SAFETY FACTOR PLOT		
RETURN TO PRE-ANALYSIS		

STRESS RESULTS

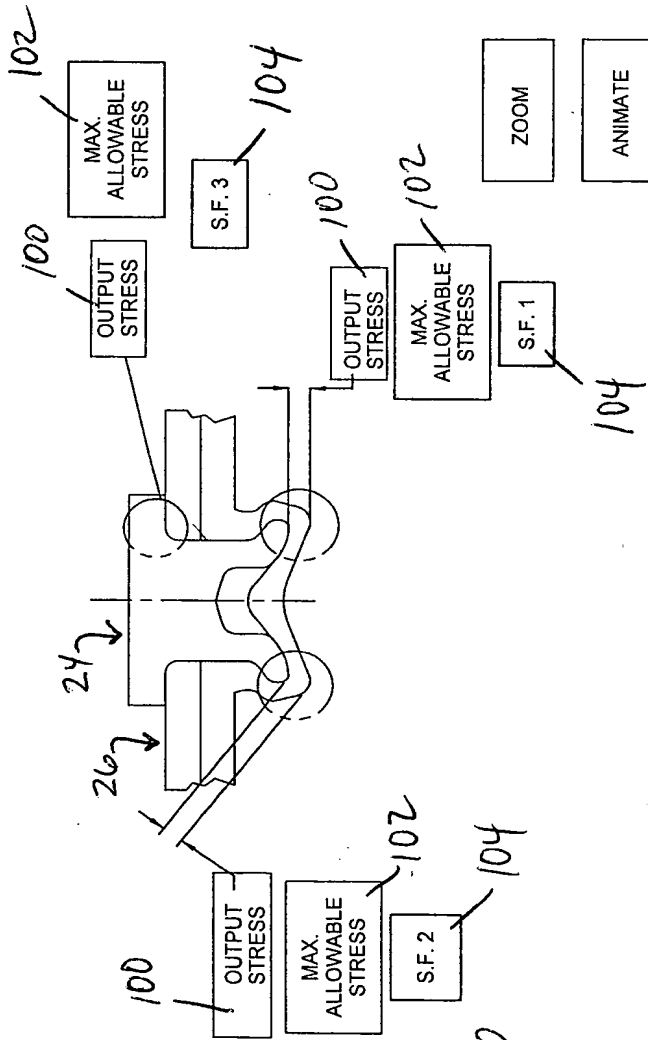


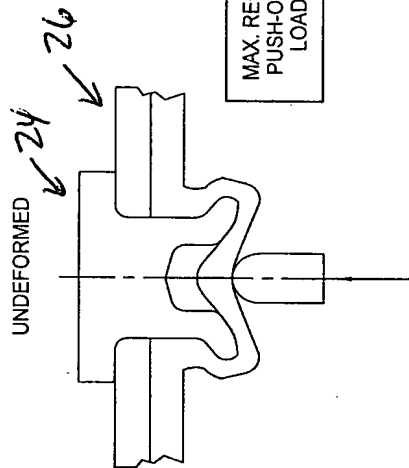
FIG. 15

FASTRIV® F.E.A. AUTOMATION
POST-ANALYSIS

PUSH-OUT LOADING

FILE EDIT PRINT

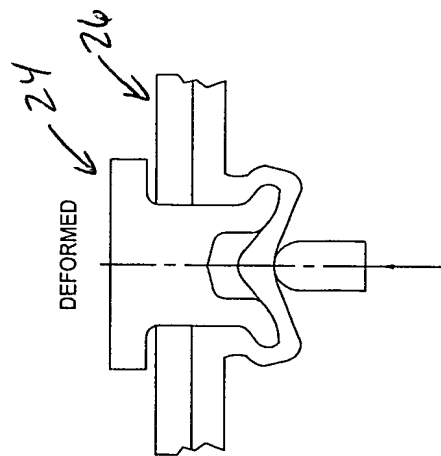
DEFORMED / UNDEFORMED PLOT
DIMENSIONAL RESULTS
STRESS RESULTS
PUSH-OUT RESULTS
SAFETY FACTOR PLOT
RETURN TO PRE-ANALYSIS



MAX. REQ'D
PUSH-OUT
LOAD

PUSH-OUT
LOAD
@ YIELD

S.F.



ZOOM

ANIMATE

L VS. Δ

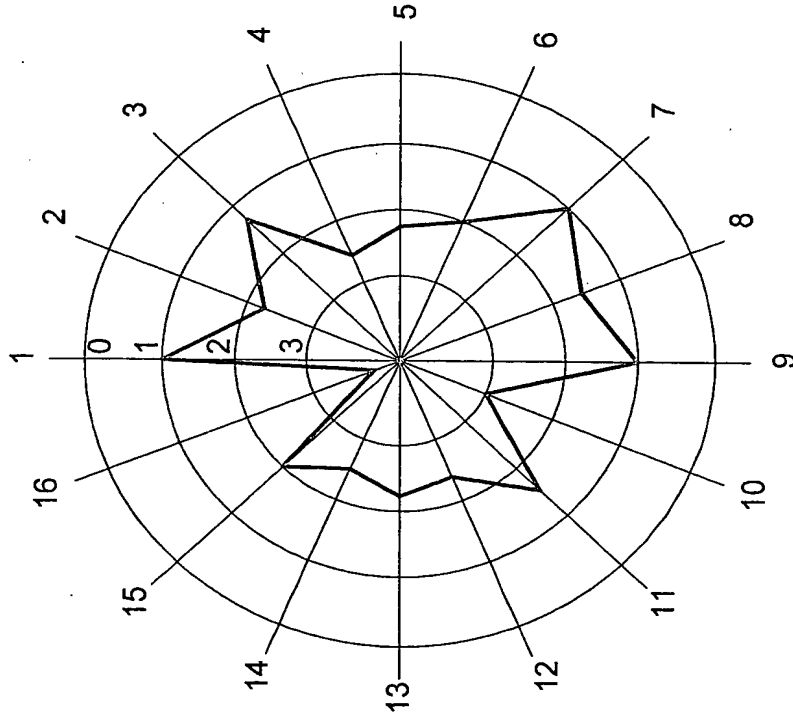
FIG. 16

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FASTIV® F.E.A. AUTOMATION
POST-ANALYSIS

SAFETY FACTOR PLOT

FILE	EDIT	PRINT
DEFORMED / UNDEFORMED PLOT		
DIMENSIONAL RESULTS		
STRESS RESULTS		
PUSH-OUT RESULTS		
SAFETY FACTOR PLOT		
RETURN TO PRE-ANALYSIS		90



LIST
SAFETY
FACTOR
VALUES

FIG. 17